



National Institute of Biomedical Imaging and Bioengineering

Bioengineering and the NIBIB

Donna J. Dean, Ph.D.
Acting Director, NIBIB
BRP 2nd Annual Grantee Meeting
March 25, 2002





1B37

National Institute of
Biomedical Imaging and
Bioengineering

NIBIB Goals

- Develop fundamental new knowledge
- Foster potent new technologies
- Nurture new generation of researchers
- Facilitate cross-cutting capabilities

P.L. 106-580



Mission Statement

NIBIB established
Acting Director named

FY02 budget hearings

Search Com. meets
Offices in Bldg 31
Adv. Council Charter

Website live

First operating budget

FY03 budget
submitted

FY03 budget hearings

Receipt date
1st RFAs



Jan Mar May Jul Sep Nov Dec Jan Feb Mar Apr May Jun Jul Aug
FY 2001 FY 2002

NIBIB Research Focus Areas (1)

- *Biomedical Imaging* – Diagnostic and cellular/molecular levels; diagnostic and research applications; single and multiple modalities; biophotonics; contrast agents; image analysis, storage, and transmittal; image-guided therapy
- *Sensors* – Biological, mechanical, and chemical detectors; transduction mechanisms; actuators; biointerfaces; integrated devices

NIBIB Research Focus Areas (2)

- ***Nanotechnology and Microtechnology*** - MEMS and NEMS, targeted therapy and drug delivery, molecular machines, imaging probes, implant technologies, nanoparticles and nanomaterials, nano-bio processors
- ***Computational Applications*** - Modeling and simulation, telemedicine, computer-assisted surgery, robotics, data processing and retrieval, image analysis
- ***Biomaterials*** - Tissue engineering, organogenesis, devices, prosthetics, implants, pharmaceuticals, biomimetics



NATIONAL INSTITUTES OF HEALTH National Institute of Biomedical Imaging and Bioengineering

● NIH Home

● NIBIB Home

Welcome to the Web Site for the National Institute of Biomedical Imaging and Bioengineering (NIBIB) - Your Gateway for Information about Biomedical Imaging and Bioengineering at the National Institutes of Health (NIH).

About
NIBIB

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Investigators

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Students

News
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BECON



General
Information

What's New?

- [NIBIB Web Site Released](#)
- [Status of the NIBIB](#)
- [Vacancy Announcement Issued for Director of the NIBIB](#)
- [Dr. Jeff Schloss Named BECON Chair](#)
- [IEEE and NIBIB Announce International Symposium on Biomedical Imaging](#)

www.nibib.nih.gov

First Release of NIBIB Initiatives

- Research and Development of Systems and Methods for Molecular Imaging ***RFA EB-2-001***
- Sensor Development & Validation ***RFA EB-2-002***

>>Applications due: April 24<<

Upcoming Meetings

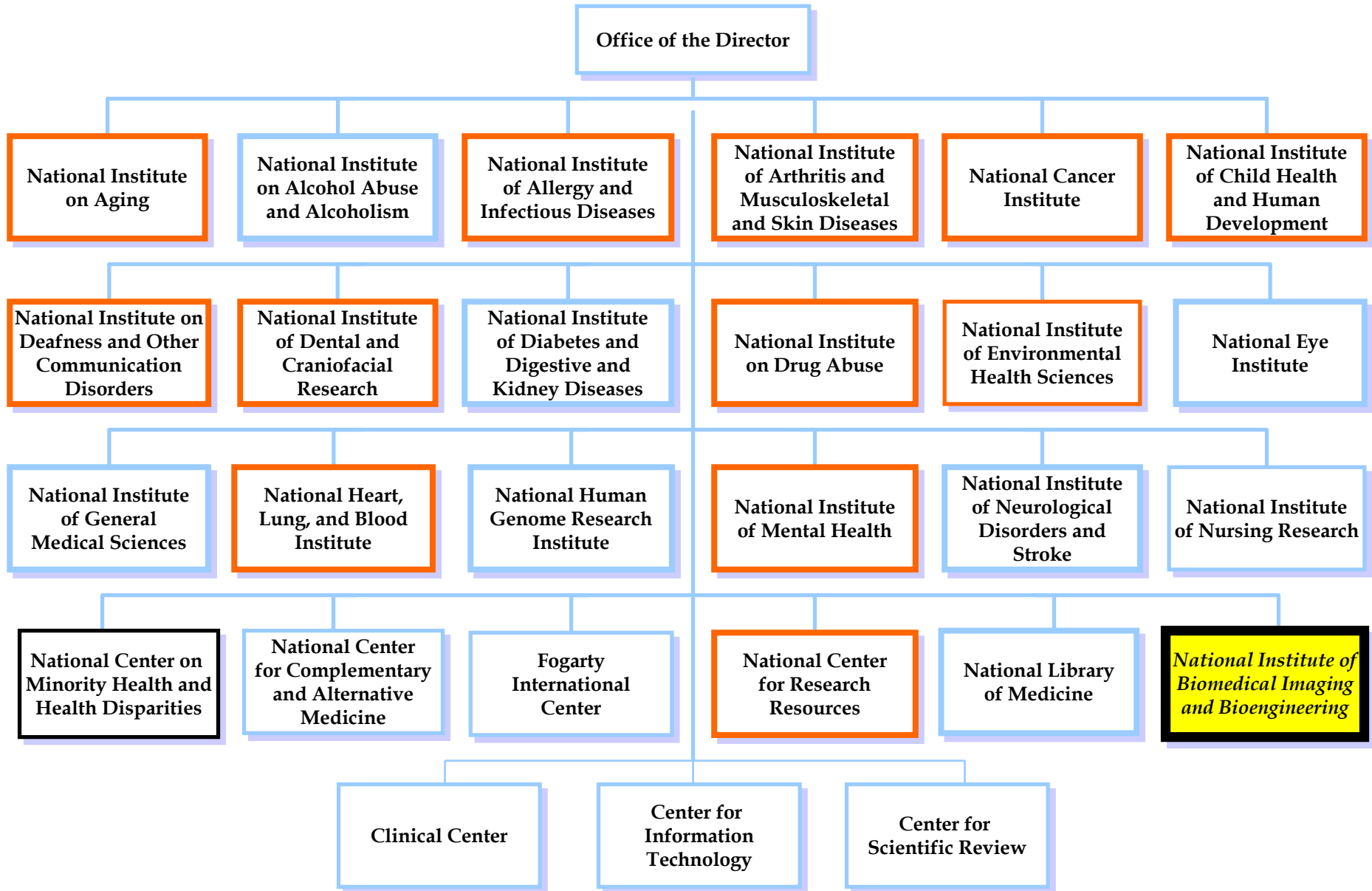
- BECON Symposium: Sensors for Biological Research and Medicine, June 24-25, 2002
- IEEE/ International Symposium on Biomedical Imaging: Macro to Nano, July 7-10, 2002



Research & Training Opportunities

- Bioengineering research partnerships
- Bioengineering research grants
- Career level training
- Pre-doctoral training
- Summer research training

National Institutes of Health



NIBIB: areas of concern in training

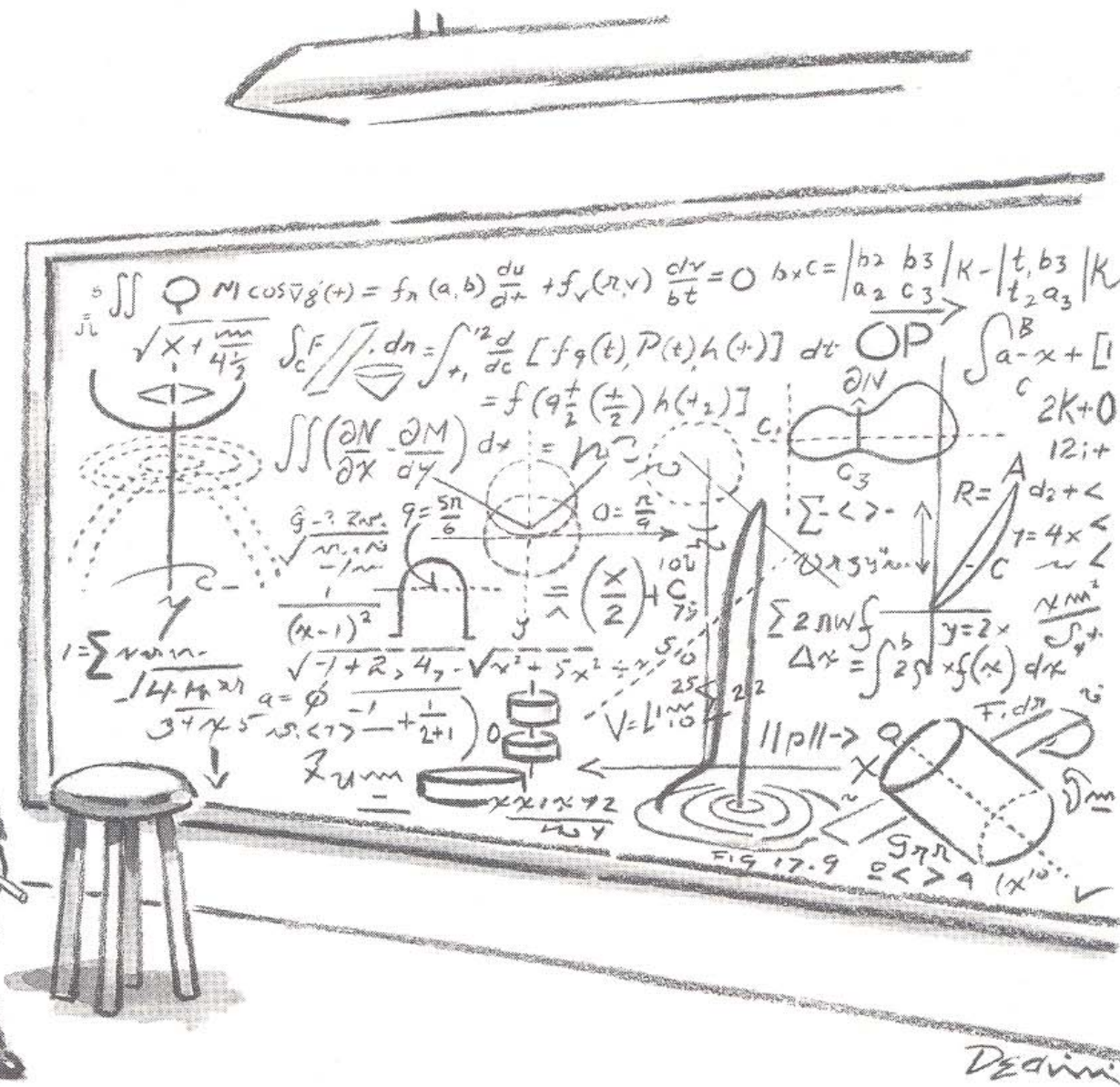
- Curriculum development, fellowship support and infrastructure support
- Development of bioimaging and bioengineering training programs
- Appropriate level of clinical experience for quantitative scientists and mechanisms to facilitate this experience at all levels

What can NIBIB Do?

- New initiatives underway as result of the June 2001 joint NIH/NSF Workshop on Bioengineering and Bioinformatics Training:
 - Web-based training opportunity database for all career levels to ensure that broad quantitative science (NSF) and biomedical science (NIH) communities have access to this information

What can NIBIB Do?

- New initiatives underway as result of the June 2001 joint NIH/NSF Workshop on Bioengineering and Bioinformatics Training:
 - Development of a joint NIH/NSF Summer Research Program for undergraduate and early graduate quantitative science students to obtain biomedical experience through regional academic centers



Devini

NIBIB: Scientific Program Staff

- Joan Harmon, Ph.D.

- Overall program coordination & Division of Bioengineering

- Richard Swaja, Ph.D.

- Training & collaborations & Division of Biomedical Imaging

- John Haller, Ph.D.

- Christine Kelley, Ph.D.

- Brenda Korte, Ph.D.

- Mollie Sourwine, M.S.

- Other team members

- *Laurence Clarke, Ph.D.*
 - *Mary Pastel, Sc.D.*
 - *Troy Nagle, Ph.D., M.D.*



FY03 Research Initiatives

- **Nanoscience and nanoparticle materials**
- **Real-time and multimeasurement biosensors**
- **Biomedical imaging technology development**
- **Informatics in biomedical imaging**
- **Small animal imaging systems**
- **Micro-analytical system development**
- **Innovative imaging methods**

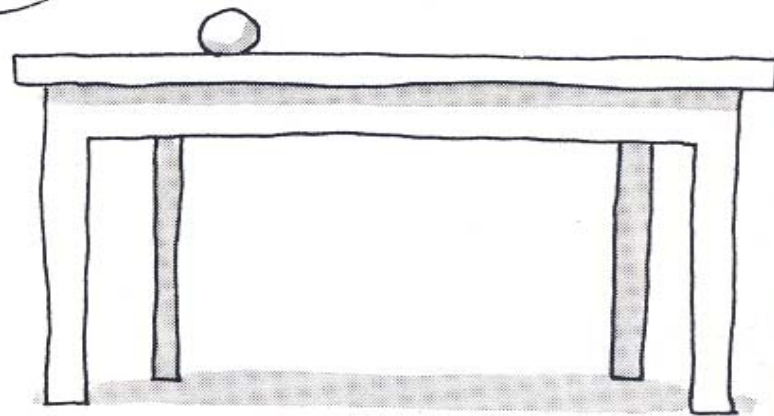
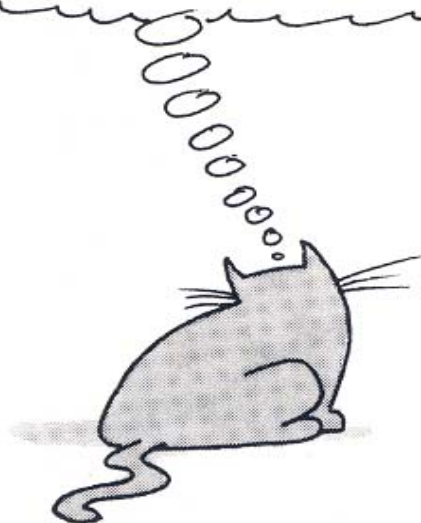
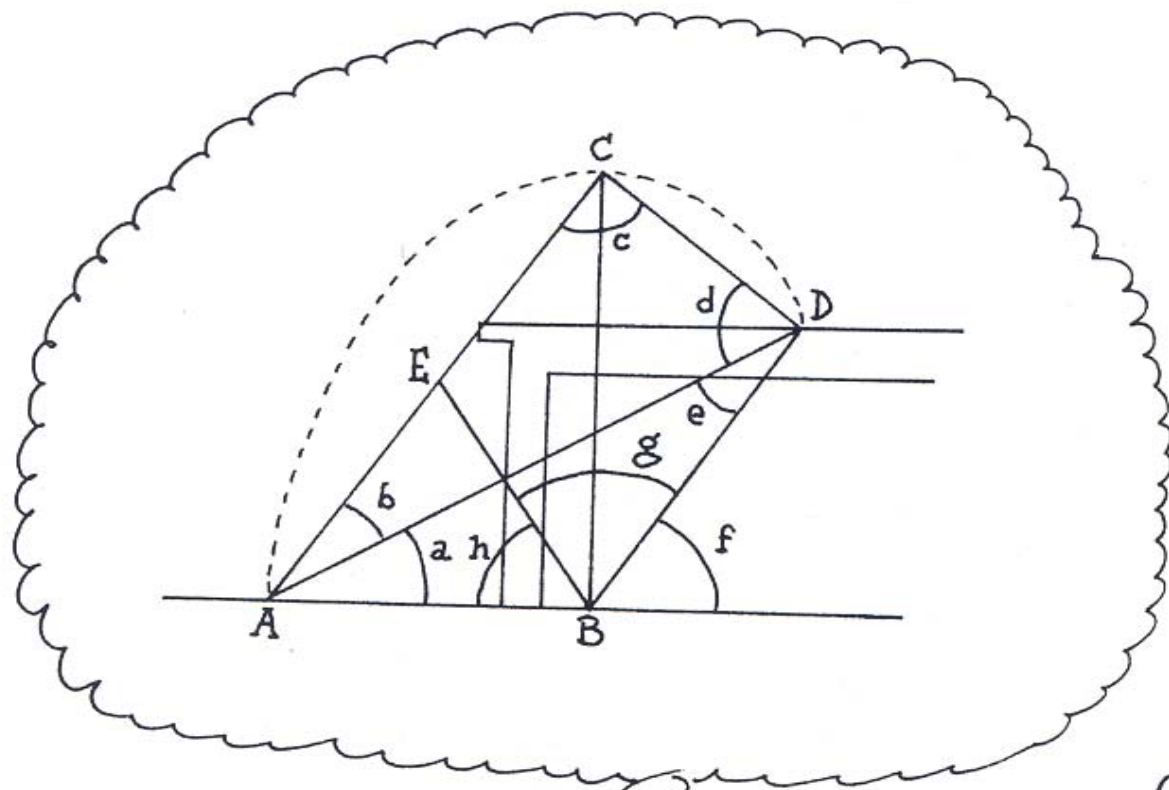
Possible Target Areas For The Future

Creation of programs and networks for:

- Biomedical imaging research and training
- Cell, tissue, and organ biomaterials research and training
- Research on materials for implants, prosthetics, and devices
- Imaging research

Possible Target Areas For The Future

- **BioMEMS and BioNEMS for medicine and biological research**
- **Novel biophotonics systems for disease diagnosis and therapy**
- **Common computation platforms for modeling/simulating biological systems**
- **Bioimaging and bioengineering for new investigators**
- **Methods and devices to detect pathogens and chemical toxins**



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What's New?

- [BECON 2002 Symposium Web site Released](#)
- [Deadline for Abstract Submittal for July IEEE/NIH Imaging Conference - February 15](#)
- [First NIBIB Research Initiatives Planned for Molecular Imaging and Sensors](#)
- [Next BRP Deadlines - July 12 for LOI and August 12 for Applications](#)

The National Institute for Biomedical Imaging and Bioengineering (NIBIB) is the newest of the research institutes at the National Institutes of Health (NIH). The NIBIB is authorized by law H.R. 1795 ([P.L. 106-580](#)) which was signed by President William Clinton on December 29, 2000.

The mission of the NIBIB is to "improve health by promoting fundamental discoveries,